

## SAPPHIRE<sup>®</sup> PLUS TOTAL FLOOD FIRE SUPPRESSION SYSTEM

### Features and Benefits

- UL/ULC Listed, FM Approved and LPCB Redbook Listed
- Fully meets EN 12094
- Designs according to EN 15004, ISO 14520 and NFPA 2001
- UL and FM verified software
- Selector valve systems
- Available with standard pressure gauge or contacted pressure gauge for pressure monitoring
- Electric, pneumatic or manual operation
- Operating range of -20 °C to 50 °C (UL, FM and CE) or 0 °C to 65 °C (UL and FM)
- Manufactured in the EU
- Centralised storage locations
- Reduced pipe diameters for traditional systems

### Applications

Conventional SAPPHIRE<sup>®</sup> systems use a storage pressure of 25 bar or 42 bar, which is suitable for many applications. The SAPPHIRE PLUS system uses a storage pressure of 70 bar to provide the designer with more flexibility when planning the layout of the system. The higher pressure means the containers can be placed further from the hazard area (if required), the use of smaller pipe diameters, and the use of selector valves to protect multiple areas using one bank of containers.

### Description

The storage pressure of the SAPPHIRE PLUS system is determined by the quantity of nitrogen added to the container during the filling process to reach a state of super pressurisation. The greater the quantity of nitrogen added to the container results in a higher storage pressure capable of driving the agent further, leading to greater flexibility during the planning and layout of the system.

### Approvals and Listings

- UL Listed
- FM Approved
- LPCB Redbook Listed
- CE Marked



E000124

### Specifications

Environmental Data	
Ozone Depletion Potential (ODP):	0
Global Warming Potential (GWP):	1
Atmospheric Lifetime (ALT):	3 to 5 days
Operating and storage temperature:	-20 °C to 50 °C (UL, FM and CE) 0 °C to 65 °C (UL and FM)

Physical Properties of 3M™ Novec™ 1230 Fluid		
Properties	Unit	Value
Molecular mass:	-	316.04
Boiling point at 1,013 bar (absolute):	°C	49.2
Freezing point:	°C	-108.0
Vapour pressure 20 °C:	bar abs*	0.3260
Liquid density 20 °C:	g/ml	1.616
Saturated vapour density 20 °C:	kg/m <sup>3</sup>	4.3305
Heat of vaporization at boiling point:	kJ/kg	88.0
Chemical formula:	CF <sub>3</sub> CF <sub>2</sub> C(O)CF(CF <sub>3</sub> ) <sub>2</sub>	
Chemical name:	Dodecafluoro-2-methylpentan-3-one	

\* 1 bar = 0.1 MPa = 100,000 Pa; 1 MPa = 1 N/mm<sup>2</sup>

## Ordering Information

<b>Part number</b>	<b>Containers with Standard Pressure Gauge</b>
303700001	15 L container assembly (TPED) 50 °C
303700002	30 L container assembly (TPED) 50 °C
303700003	45 L container assembly (TPED) 50 °C
303700004	60 L container assembly (TPED) 50 °C
303700005	120 L container assembly (TPED) 50 °C
303700006	180 L container assembly (TPED) 50 °C
303700013	15 L container assembly (TPED) 65 °C
303700014	30 L container assembly (TPED) 65 °C
303700015	45 L container assembly (TPED) 65 °C
303700016	60 L container assembly (TPED) 65 °C
303700017	120 L container assembly (TPED) 65 °C
303700018	180 L container assembly (TPED) 65 °C

<b>Part number</b>	<b>Containers with Contacted Pressure Gauge</b>
303700007	15 L container assembly (TPED) 50 °C
303700008	30 L container assembly (TPED) 50 °C
303700009	45 L container assembly (TPED) 50 °C
303700010	60 L container assembly (TPED) 50 °C
303700011	120 L container assembly (TPED) 50 °C
303700012	180 L container assembly (TPED) 50 °C
303700019	15 L container assembly (TPED) 65 °C
303700020	30 L container assembly (TPED) 65 °C
303700021	45 L container assembly (TPED) 65 °C
303700022	60 L container assembly (TPED) 65 °C
303700023	120 L container assembly (TPED) 65 °C
303700024	180 L container assembly (TPED) 65 °C

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